ACQUIRED BRAIN INJURY IRELAND

Research Briefing Paper No. 1

What research is telling us about the economic value of rehabilitation for people with brain injury

In April 2022 a paper was published by several authors from the Global Brain Health Institute, Trinity College Dublin (TCD)[1]. It focuses on what research can tell us about which rehabilitation services for people with acquired brain injury (ABI) are most cost effective. It is important to have this evidence for the Government to make informed decisions about investing in rehabilitation services that improve the lives of people with ABI and their families. It is also important for Acquired Brain Injury Ireland as an advocacy organisation to have that evidence to campaign for increased investment in services for people with ABI.

This briefing paper provides a lay summary of the published paper. It also includes the reflections from Acquired Brain Injury Ireland.

OVERVIEW

Acquired brain injury has lifelong impacts on the person and their family. Many people require ongoing supports and services for the rest of their lives. Services in the community are especially important.

The aim of this paper is to appraise the current published research on the cost-effectiveness of rehabilitation services.

BACKGROUND

There are approximately 100 million people with ABI globally. Their care is estimated to cost $400m annually. ABI is the third most common cause of death. It is also becoming a major health and economic issue. There are a variety of treatments for people with ABI. Some have been proven to be effective in managing the symptoms or reducing the impact.

The economic costs of ABI are becoming increasingly important to understand. The demand for services is growing. There is not enough evidence available and ABI research is underfunded. The availability of rehabilitation services depends on health policy decisions. Therefore, evidence is needed to inform decisions on how funding is allocated for rehabilitation.

METHODS

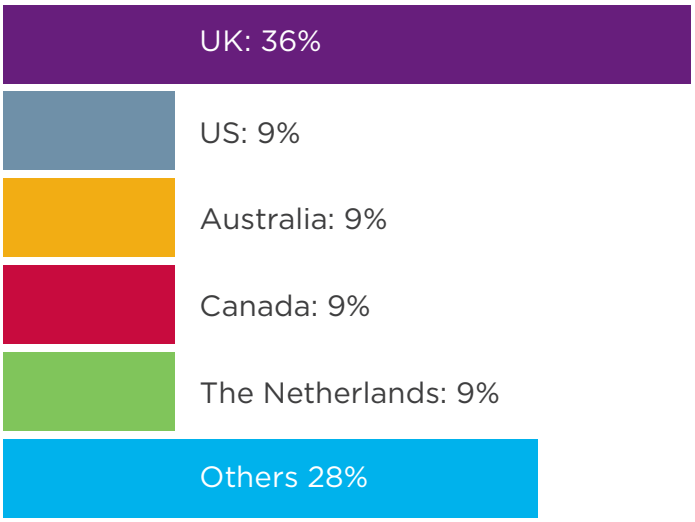
The research team used several methods to find the best available evidence to include in the paper.

RESULTS

The researchers reviewed 41 research articles that met the criteria for the review. The research varied a lot. It differed in its methods, target populations, time frames, types of services and funding arrangements.

Economic evaluations of ABI rehabilitation services have been rare. Since 1998, 15 countries have completed research in this area. The majority come from the United Kingdom, the United States and Australia. There is no contribution from Ireland.

Countries which have completed research in this area



1. Eileen Mitchell, Elayne Ahern, Sanjib Saha, Gráinne McGettrick, Dominic Trépel (2022) The Value of Nonpharmacological Interventions for People With an Acquired Brain Injury: A Systematic Review of Economic Evaluations https://pubmed.ncbi.nlm.nih.gov/35525832/

The studies were categorised into 4 groups:

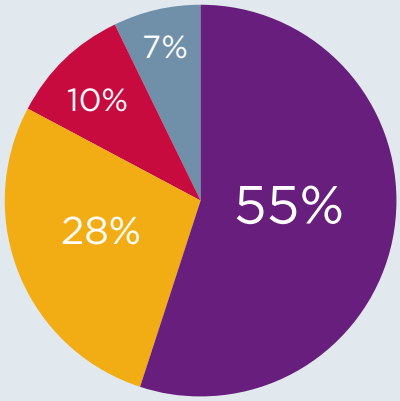
1. Inpatient and outpatient rehabilitation

2. Neuro-psychological interventions

3. Allied health care interventions (occupational, speech or physical therapy)

4. Home rehabilitation and Early Supported Discharge

This chart shows the proportion of studies reviewed and what they are telling us about rehabilitation:



- **55%** – Produces health and saves money
- **28%** – Produces health costs more but are still cost effective
- **10%** – Costs more but less effective
- **7%** – Costs less and are less effective

What the research studies tell us about rehabilitation

The key message is that most studies in this review show that rehabilitation improves health outcomes and can save money. Therefore, rehabilitation is worth the investment.

Research tells us that rehabilitation:

IMPROVES HEALTH

SAVES MONEY

WORTH THE INVESTMENT

Other important findings from the review include:

- **3 studies** involving extra rehabilitation care reported cost savings from £329 to £1889;
- **4 studies** concluded that specialist services cost less and were more cost effective than usual care with cost savings ranging from £325 to £6063. (Usual care is the care that study participants who are not receiving the tested intervention receive);
- **6 studies** involving integrated rehabilitation services reported cost savings ranging from £632 to £10,987;
- **9 studies** looked at cost effectiveness of neuropsychological services;
- **10 studies** looked at the cost effectiveness of healthcare professional interventions. Some of these studies reported cost savings (rather than treatment as usual). Activities of daily living (re) training studies showed cost savings. One study found that the hospital stay was reduced;
- **5 studies** looked at the health and economic benefits of home rehabilitation. They reported cost savings and reduced length of hospital stays.

Discussion

This is the first of this type of review focusing on rehabilitation services for people with ABI.

This review involved studies from several different countries. However, it is recommended the economic research be carried out in other countries (e.g. Ireland).

Individual countries have different policy and budgetary constraints. Countries have different guidance on how much they should pay for services to improve health. Some have none. Cost-effectiveness is only one of the criteria that a country uses to make decisions around what services they fund. These differences make it difficult to see which interventions/services represent best value for money for ABI rehabilitation. It often depends on each countries' resources and budget.

Often these existing studies did not consider the wider costs to society (e.g. impact on families or losses in income). However, when considered, the economic argument for investment is always far more compelling. Future studies should include looking at informal care costs and impact on productivity (e.g. ability to work).

Despite the number of people affected by ABI, the research is limited. Most of the evidence base reviewed was conducted on people with stroke, followed by those with traumatic brain injury and only 1 conducted on the ABI population. More research is needed on the wider ABI population.

Many people will require lifetime rehabilitation. Good use of resources is a must. Most studies looked at the economic impact over less than 5 years. Studies need to focus on lifetime horizons to be more useful for decision-makers to decide on strategies for ABI prevention, treatment, and rehabilitation.

Conclusion

This economic review suggests that ABI rehabilitation services improve health compared with usual care. Many also suggest rehabilitation saves money required under current usual care. More research is urgently needed to examine the cost-effectiveness of rehabilitation services. However, ABI intervention research is currently severely underfunded. This paper highlights the need for more research in this area.

Reflections on the paper from Acquired Brain Injury Ireland

- We very much welcome this review to add to our knowledge base.
- We now know from this review that rehabilitation improves people's lives and saves money. Importantly, it is worth the investment.
- The paper proves that there is a lot of work to do to increase the evidence on the cost effectiveness of rehabilitation for our community.
- We need a global effort to improve funding and grow the body of knowledge in this area of research.
- We need this evidence to advocate for increased investment in rehabilitation services for people with brain injury.
- Currently in Ireland services are under-developed and under-resourced. More evidence in this field is essential to campaign for more funding for rehabilitation services.

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